What is claimed is:

(1) A curable homogeneous blend comprising:

(a) a 1,2-polybutadiene oligomer having a number average molecular weight (Mn) of about 500 Daltons to about 50,000 Daltons,

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(b) a bis-phenol-A derivative that is end-capped with acrylate functionality, and

(c) a reactive component that has at least one terminal double bond and that enhances the compatibility between the 1,2-polybutadiene oligomer and the acrylated bis-phenol-A derivative.

(2) A curable blend according to Claim 1 wherein the 1,2-polybutadiene oligomer has a number average molecular weight (Mn) of about 1,000 to about 5,000 Daltons.

(3) A curable blend according to Claim 1 wherein the 1,2-polybutadiene oligomer is a butadiene homopolymer.

(4) A curable blend according to Claim 3 wherein the butadiene homopolymer contains an amount of 1,4-polybutadiene.

(5) A curable blend according to Claim 4 wherein the 1,4-polybutadiene is present in an amount up to about 60% by weight based on the weight of the butadiene homopolymer.

(6) A curable blend according to Claim 1 wherein the 1,2-polybutadiene oligomer is a copolymer.

(7) A curable blend according to Claim 6 wherein the 1,2-polybutadiene copolymer is prepared from butadiene and a vinyl monomer that is a member selected from the group consisting of: styrene, vinyl acetate, divinyl benzene, isoprene, chloroprene,

alkyl acrylates, alkyl methacrylates, ethylene, propylene, butylene and mixtures thereof.

(8) A curable blend according to Claim 1 wherein the 1,2-polybutadiene oligomer is present in the blend in an amount of about 5% to about 50% based on weight.

(9) A curable blend according to Claim 1 wherein the bis-phenol-A derivative is an epoxy prepared from epichlorohydrin and bis-phenol-A.

(10) A curable blend according to Claim 1 wherein the bis-phenol-A derivative is ethoxylated.

(11) A curable blend according to Claim 1 wherein the reactive component is an aliphatic monofunctional or multifunctional acrylate or methacrylate.

(12) A curable blend according to Claim 11 wherein the acrylate or methacrylate is a member selected from the group consisting of: isodecyl acrylate, lauryl acrylate, lauryl methacrylate, nonyl phenyl acrylate, and dodecyl acrylate.

(13) A curable blend according to Claim 1 wherein the reactive component is a polyoxyalkylene monofunctional or multifunctional acrylate or methacrylate.

(14) A curable blend according to Claim 13 wherein the polyoxyalkylene monofunctional or multifunctional acrylate or methacrylate is a member selected from the group consisting of: 2(2-ethoxyethoxy) ethyl acrylate, 2[2-(2-ethoxyhexyloxy)ethoxy] ethyl acrylate, di(ethylene glycol) dimethacrylate, di(propylene glycol) diacrylate, and trimethylolpropane triacrylate.

(15) A curable blend according to Claim 1 wherein the reactive component is a compound substituted with long chain alkyl or alkoxy segments.

(16) A curable blend according to Claim 15 wherein the substituted reactive component is a member selected from the group consisting of: alkoxylated nonyl phenol acrylate and alkoxylated nonyl phenol methacrylate.

(17) A curable blend according to Claim 1 wherein the reactive component is a heterocyclic reactive organic compound.

(18) A curable blend according to Claim 17 wherein the heterocyclic compound is a member selected from the group consisting of: n-vinyl pyrrolidone and methyl-n-vinyl pyrrolidone.

(19) A curable blend according to Claim 1 further comprising a hydroxy functional adhesion promoter.

(20) A curable blend according to Claim 19 wherein the hydroxy functional compound is a member selected from the group consisting of hydroxyethyl methacrylate and ethoxylated hydroxyethyl methacrylate.

(21) A curable blend according to Claim 1 further comprising a photoinitiator that initiates free radical crosslinking upon exposure to light.

(22) A curable blend according to Claim 21 wherein the photoinitiator is a member selected from the group consisting of (2,6-dimethoxybenzoyl)-2,4,4-trimethylpentyl phosphine oxide, 2-hydroxy-2-methyl-1-phenyl-propane-1, 1-hydroxy-cyclohexyl phenyl ketone, benzophenone and mixtures thereof.

(23) A curable blend according to Claim 1 further comprising a ground state catalyst that initiates free radical crosslinking upon exposure to heat.

(24) A curable blend according to Claim 23 wherein the ground state catalyst is a peroxide.

(25) A coated substrate wherein the coating comprises a crosslinked composition prepared from a homogeneous blend comprising:

(a) a 1,2-polybutadiene oligomer having a number average molecular weight (Mn) of about 500 Daltons to about 50,000 Daltons,

(b) a bis-phenol-A derivative that is end-capped with acrylate functionality, and

(c) a reactive component that has at least one terminal double bond and that enhances the compatibility between the 1,2-polybutadiene oligomer and the bis-phenol-A derivative.

(26) A coated substrate according to Claim 25 wherein the 1,2-polybutadiene oligomer has a number average molecular weight (Mn) of about 1,000 to about 5,000 Daltons.

(27) A coated substrate according to Claim 25 wherein the butadiene homopolymer is a 1,2-butadiene homopolymer.

(28) A coated substrate according to Claim 27 wherein butadiene homopolymer contains an amount of 1,4-polybutadiene.

(29) A coated substrate according to Claim 28 wherein the 1,4-polybutadiene is present in an amount up to about 60% by weight, based on the weight of the polybutadiene oligomer.

(30) A coated substrate according to Claim 25 wherein the 1,2-polybutadiene oligomer is a copolymer.

(31) A coated substrate according to Claim 30 wherein the 1,2-polybutadiene copolymer is prepared from butadiene and a vinyl monomer that is a member selected from the group consisting of: styrene, vinyl acetate, divinyl benzene, isoprene, chloroprene, alkyl acrylates, alkyl methacrylates, ethylene, propylene, butylene and mixtures thereof.

(32) A coated substrate according to Claim 25 wherein the 1,2-polybutadiene oligomer is present in the blend in an amount of about 5% to about 50% based on weight.

(33) A coated substrate according to Claim 25 wherein the bis-phenol-A derivative is prepared from epichlorohydrin and bis-phenol-A.

(34) A coated substrate according to Claim 25 wherein the bis-phenol-A derivative is ethoxylated.

(35) A coated substrate according to Claim 25 further comprising a photoinitiator that initiates free radical crosslinking upon exposure to light.

(36) A coated substrate according to Claim 35 wherein the photoinitiator is a member selected from the group consisting of (2,6-dimethoxybenzoyl)-2,4,4-trimethylpentyl phosphine oxide, 2-hydroxy-2-methyl-1-phenyl-propane-1, 1-hydroxy-cyclohexyl phenyl ketone, benzophenone and mixtures thereof.

(37) A coated substrate according to Claim 25 further comprising a ground state catalyst that initiates free radical crosslinking upon exposure to heat.

(38) A coated substrate according to Claim 37 wherein the ground state catalyst is a peroxide.

(39) A process for preparing a coated substrate comprising:

(a) obtaining a substrate with a clean surface,

(b) applying a coating to the substrate wherein the coating comprises a homogeneous blend comprising:

(x) a 1,2-polybutadiene oligomer having a number average molecular weight (Mn) of about 500 Daltons to about 50,000 Daltons,

(y) a bis-phenol-A derivative that is end-capped with acrylate functionality, and

(z) a reactive component that has at least one terminal double bond and that enhances the compatibility between the 1,2-polybutadiene oligomer and the bis-phenol-A derivative, and

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(c) exposing the homogeneous blend to radiant energy.

(40) A process for preparing a coated substrate according to Claim 39 wherein the radiant energy is derived from a source which is member selected from the group consisting of electron beam, ultraviolet, radiofrequency, infrared, and combinations thereof.

(41) A process for preparing a coated substrate according to Claim 40 wherein the substrate is a metal that couples in a radiofrequency induction field to generate heat and initiate catalyst activity.

(42) A process for preparing a coated substrate comprising:

(a) obtaining a substrate with a clean surface,

(b) applying a coating to the substrate wherein the coating comprises a homogeneous blend comprising:

(w) a 1,2 – polybutadiene oligomer having a number average molecular weight (Mn) of about 500 Daltons to about 50,000 Daltons,

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(x) a bis-phenol a derivative that is end-capped with acrylate functionality, and

(y) a reactive component that has at least one terminal double bond and that enhances the compatibility between the 1,2 – polybutadiene oligomer and the bis-phenol-A derivative, and

(z) a ground state catalyst that initiates free radical cross-linking upon exposure to heat, and

(c) exposing the homogeneous blend to thermal energy.

(43) A process for preparing a coated substrate according to Claim 42 wherein the homogeneous blend is exposed to both thermal energy and radiant energy.

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